

Susceptible Area Evaluations

Chapter 5

Susceptible Areas

- Geologically Susceptible Areas
- Ecologically Susceptible Areas
- Wellhead Protection Areas

Susceptible Area Characteristics

- Unpredictability of COC transport mechanisms
- Exceptional environmental resource value
- Or, increased ecological risk

Geologically Susceptible Areas

- Conditions that invalidate the assumptions of partitioning model
- Examples: karst terrain, mined areas, fractured rock geology where conduit ground water flow occurs
- Affects evaluation of
 - migration to ground water
 - plume stability

Wellhead Protection Areas

- The surface and subsurface area, delineated by a fixed boundary, which contributes water to a public water supply system well or wellfield through which contaminants are likely to move and reach the well within a specified period.

Wellhead Protection Areas (cont)

- Closure with institutional controls generally not appropriate
 - Exception: attenuation demonstration with concurrence of public water supply authority and IDEM (Drinking Water Branch)
 - Exception: install treatment system at wellhead with concurrence of public water supply authority and IDEM (Drinking Water Branch)

Wellhead Protection Areas

- Maps
 - http://www.state.in.us/idem/owm/dwb/welhead/whpp/where_R.html#

Ecologically Susceptible Areas (ESAs)

- Special habitats with associated receptors including:
 - parks, forests, state nature preserves and wildlife refuges
 - habitats for endangered or threatened species
 - surface waters (and wetlands)
 - riparian and breeding areas for birds, mammals, amphibians and reptiles
 - migratory and wintering areas

Ecologically Susceptible Areas

- Forests and Woodlands
 - Page 5-5 of Technical Guidance Document
 - Delete the definition
 - Delete Forests and Woodlands from bullet list

Ecologically Susceptible Areas (cont)

- Box with contact numbers and websites for info on pg 5-7

Ecologically Susceptible Areas

- Wetland Maps
 - www.fws.gov/mapper_tool.htm

Baseline Ecological Evaluation (BEE)

- First step in two step screening process
 - desktop review and site inspection
 - ESAs are present in the vicinity
 - ESAs could be affected by COCs at the site
- If ESAs not present, or no potential to migrate beyond site, use human health closure levels

Limited Ecological Assessment

- Sampling of soil, sediments, surface water, and/or ground water within the ESA
- Sampling of soil, sediments, surface water, and/or ground water along pathways from site to ESA
- If COC detected, impact assumed, conduct ecological risk assessment
- Background consideration

Ecological Risk Assessment

- Performed by environmental professionals experienced in ecological risk assessments
- “Guidelines for Ecological Risk Assessment” (US EPA 1998)
- workgroup

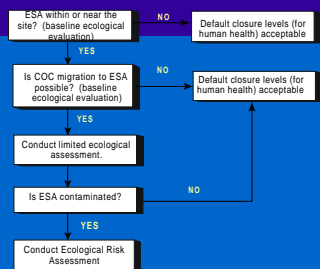


Figure 5-4 Steps for Evaluating Ecologically Susceptible Areas (ESAs)